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COASTAL MUNICIPALITIES IN THE SPATIAL DEVELOPMENT OF RUSSIA: MULTIDIMENSIONAL TYPOLOGIZATION

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In the spatial structure of modern Russia, vast coastal zones play a significant role. Their further development requires a highly detailed and localized approach (down to the level of specific coastal municipalities) that considers the natural, ecological, and socio-economic conditions of settlement and economic activity. This article presents a methodological approach and the results of a multidimensional typology of Russia's coastal municipalities (186 urban districts, municipal districts, and municipal okrugs (a type of municipality in Russia)). The typology is based on interbasin natural and economic zonation; comparison of the economic, demographic, and areal size of municipalities; the position of their administrative centres relative to the coastline; central–peripheral relations within the framework of the 'main bases' of marine activity; marine economic functionality; prevailing local socio-economic and environmental problems; and the availability of federal support through preferential business regimes. The typologization algorithm is described along with its cartographic visualization (using GIS). The article also provides an assessment and comparative analysis of the socio-economic dynamics of different types and subtypes of coastal municipalities. The study identifies multidirectional trends in the spatial socio-economic development of Russia's coastal zone: polarization, population and economic concentration in some municipalities, and economic contraction in others. The most problematic typological groups and their geographic locations (Pacific Russia and the Arctic zone) are identified. Finally, the

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article emphasizes the importance of accounting for these typological features in Russia's spatial development strategy, including in the context of federal support for geostrategic territories and the creation of a network of anchor settlements.

Keywords:
coastal municipalities, typology, marine complex, spatial development, Russia

Introduction

Analysing the problem of modern Russia's spatial development is inseparable from examining its maritime and, more particularly, coastal component, as is emphasised in the Spatial Development Strategy of Russia with Outlook to 2036.[1] This link is most evident at the lowest level of territorial taxonomy, which in Russia, due to the specificities of national statistics, is represented by municipalities. Shaped by the multifaceted influence of the maritime factor [1], the common features of coastal municipalities (CMs) coexist with differences in natural and economic conditions and settlement patterns, both among individual municipalities and among isolated groups identified within drainage basins and their subregions. The few approaches previously developed in sectoral and regional studies of coastal municipalities [2—7] rely mainly on component-based analysis or display a selective focus on specific sections of the coast. Consequently, they fail to offer a comprehensive comparative perspective on the systemic conditions and distinctive features of these territories across the country, one grounded in a unified set of criteria and an integrated information-analytical framework. This article aims to provide a significant parameter-based multidimensional typology of the entire set of Russia's coastal municipalities, reflecting the specific factors, trends, and priorities of their socio-economic dynamics within the nationwide context of spatial development.

State of research. The typological approach in social and geographical research is among the consistently relevant yet traditional and fundamental methods [8]. In a broad sense, its application also includes the delineation as seen both in Russian scholarship [9—13] and in the work of international authors [14—17] of the entire multi-scalar set of territories identified as coastal, including zones, regions, cities and their agglomerations. These structures, in turn, serve as distinct objects for parameterisation and classification across a range of typologically significant characteristics, as shown in relevant publications [18; 19].

In recent years, reflecting the broader trend toward the 'municipalisation' of spatial development research [20], Russian scholars have elaborated productive

[1] 2030 Spatial Development Strategy of Russia with Outlook to 2036. Ministry of Economic Development of the Russian Federation, 2025, URL: https://www.economy.gov.ru/material/directions/regionalnoe_razvitie/strategicheskoe_planirovanie_prostranstvennogo_razvitiya/strategiya_prostranstvennogo_razvitiya_rossii_do_2030_goda_c_prognozom_do_2036_goda/ (accessed 05.02.2025).

approaches to the typology of municipal entities. These approaches account for the economic specialisation of particular municipalities and their position within settlement systems [21], while also capturing the pronounced national interterritorial differences in population distribution and economic performance, marked by substantial socio-economic disparities along the north-south and west-east axes [22]. The situation is further complicated by core—periphery contrasts and the influence of the 'capital city' factor [23]. As for CMs proper, significant criteria include the distance from the sea [24], the location of the municipality's centre, the core of socio-economic activity, relative to the coastline ('coastward orientation' [25]), and the role of the municipality and localised groupings thereof in the maritime economy of the country and its regions ('anchor centres' of maritime activity [26]).

Materials and methods

The research approach to the typology of coastal municipalities described in this article is both multi-scalar and focused on the entire extensive and dispersed set of Russia's coastal territories. Based on previously considered criteria of coastality direct adjacency to the sea, developed maritime functions, functional links with maritime economic complexes, including sea or estuary ports, and the formation of integrated local coastal settlement systems under the influence of agglomeration effects [7] the composite object of analysis comprises 71 urban districts, 7 closed administrative-territorial formations (closed cities), and 106 municipal districts, belonging to 21 federal subjects of the Russian Federation. Owing to data limitations, municipalities in newly established regions, three of which are coastal, are absent from the sample; conversely, two coastal cities of federal significance Saint Petersburg and Sevastopol are included, provisionally treated as coastal municipalities. The coastal territories subjected to typology account for 27.6 % of the country's total area and 13.9 % of its population as of 1 January 2024.

The multidimensionality of the typology is defined by its simultaneous focus on:

— the actual *inter-basin natural and economic zoning*, which determines differences in the degree of residential concentration (population density) and economic development (taxable income of individuals and individual entrepreneurs per territorial unit);

— the *economic, demographic and territorial weight* of CMs. The type of CM according to this criterion is defined and mapped on the basis of a three-component index reflecting the ratio of a CM's share in total area, population size and taxable monetary income of individuals and individual entrepreneurs across all Russian CMs), following the method described in [27];

— *positional characteristics* of CMs, understood as the combination of their degree of coastward orientation and their location within coastal (water—land) core—periphery systems. On this basis, the set of CMs is divided into: 1) cores of anchor centres; 2) peripheral components of anchor centres; 3) anchor points for maritime activity outside anchor centres; 4) coastward oriented CMs (with the core of economic activity located at the shoreline) lacking significant components of maritime economic activity; 5) CMs without pronounced maritime functions or coastward orientation; 6) CMs with maritime functions outside anchor centres;

— the *maritime functionality* of CMs, while distinguishing their invariants: monofunctional CMs specialising in port services, a single maritime industry, recreation, offshore mineral extraction, or education and science; multifunctional with various combinations of functions; and CMs lacking pronounced maritime functions;

— *prevailing local problems in the socio-economic and environmental development* of specific CMs, including: transport, logistical and economic isolation due to remoteness from major centres, assessed using the method described in [28]; compression of settlements and overall populated space primarily through depopulation; substantial lag in socio-economic development levels relative to average CM performance at drainage basin and national levels); severe natural and climatic living conditions primarily in the Far North, mountainous areas and regions with intense and hazardous seismic and volcanic activity (defined according to [29; 30]); vulnerability of natural systems in environmental hotspots and problem areas; unfavourable position from the strategic military perspective; and challenges to economic activity arising from geopolitical circumstances;

— *federal support* in the form of preferential regimes for business activity, such as special economic zones and free port status.

The demographic, economic and territorial weight of CMs, along with their level of socio-economic development, was determined using municipal statistics from Rosstat for 2016—2024. The choice of 2016 allows the inclusion of data for the Republic of Crimea and the city of Sevastopol. The most recent population data are available as of 1 January 2024. As for taxable income, which serves as the main economic measure, data for all CMs are available for 2021.[1]

The coastward orientation of a CM was determined based on the geographic location of its administrative centre. Anchor centres were identified in an earlier study [26], with the core and periphery of each centre defined according to the economic weight of the CM, but only within the boundaries of the respective anchor centre, rather than across all Russian CMs.

The analysis of CMs' maritime functions drew on various open sources of qualitative and quantitative information, shedding light on the structure of their economies. In particular, the study examined data on seaport activity, the

[1] Municipal Statistics, 2024, URL: https://rosstat.gov.ru/munstat (accessed 06.12.2024).

performance of seaside resorts, and the presence of maritime industries such as shipbuilding and fish processing, alongside Rosstat municipal statistics on industry-specific revenues. The typology was ultimately produced through expert assessment, based on this combination of qualitative and quantitative information.

Similar approaches were used to assess the prevailing local problems in socio-economic and environmental development, drawing partly on statistical data, such as declines in population and per capita taxable income, and partly on qualitative characteristics.

The presence of federal support in the form of preferential regimes was determined by analysing Russian legal acts as published in legal reference systems.

Results and discussion

Any Russian CM typically exhibits several significant typological characteristics simultaneously, producing a multiplicity of combinations within the set of coastal municipalities and consequently giving rise to probabilistic typological groups and subgroups. For example, of the 186 CMs studied, 116 were identified as coastward-oriented, accounting for 77 % of the population, 76 % of the area and approximately 68 % of the taxable income of all CMs in the country. Twenty-nine CMs, concentrating 63 % of the population of all CMs and over 50 % of their economic potential, form the cores of the country's maritime anchor centres, while a further 85 CMs cluster around them as peripheral components. Eighty-one CMs are monofunctional, 66 are multifunctional and 39 effectively lack maritime functions, according to the study results. This multivariant combination of significant properties and characteristics within individual municipalities coexists with distinct multi-scalar areas marked by pronounced typological features, collectively providing a clear geographical basis for the typology of Russia's coastal municipalities.

The specific characteristics of Russian CMs necessitate a three-tiered approach to typology, combining three interrelated aspects. The first aspect focuses on the positional characteristics and settlement patterns of specific CMs, evident at both the national and regional levels. Within this framework, it is appropriate to distinguish two basic macrotypes of CMs with pronounced territorial differentiation: the north-eastern (Arctic — Pacific) type, characterised by comparatively low population density and fragmentary economic activity, and the south-western (Baltic — Black Sea — Azov — Caspian) type, marked by higher population and economic density and a predominance of large agglomerations (Fig. 1).

The main bulk of CMs is concentrated in the north-east of the country, accounting for 97.1 % of their total combined territory, whereas the south-west contains their predominant demographic and though less pronounced economic potential (Table 1).

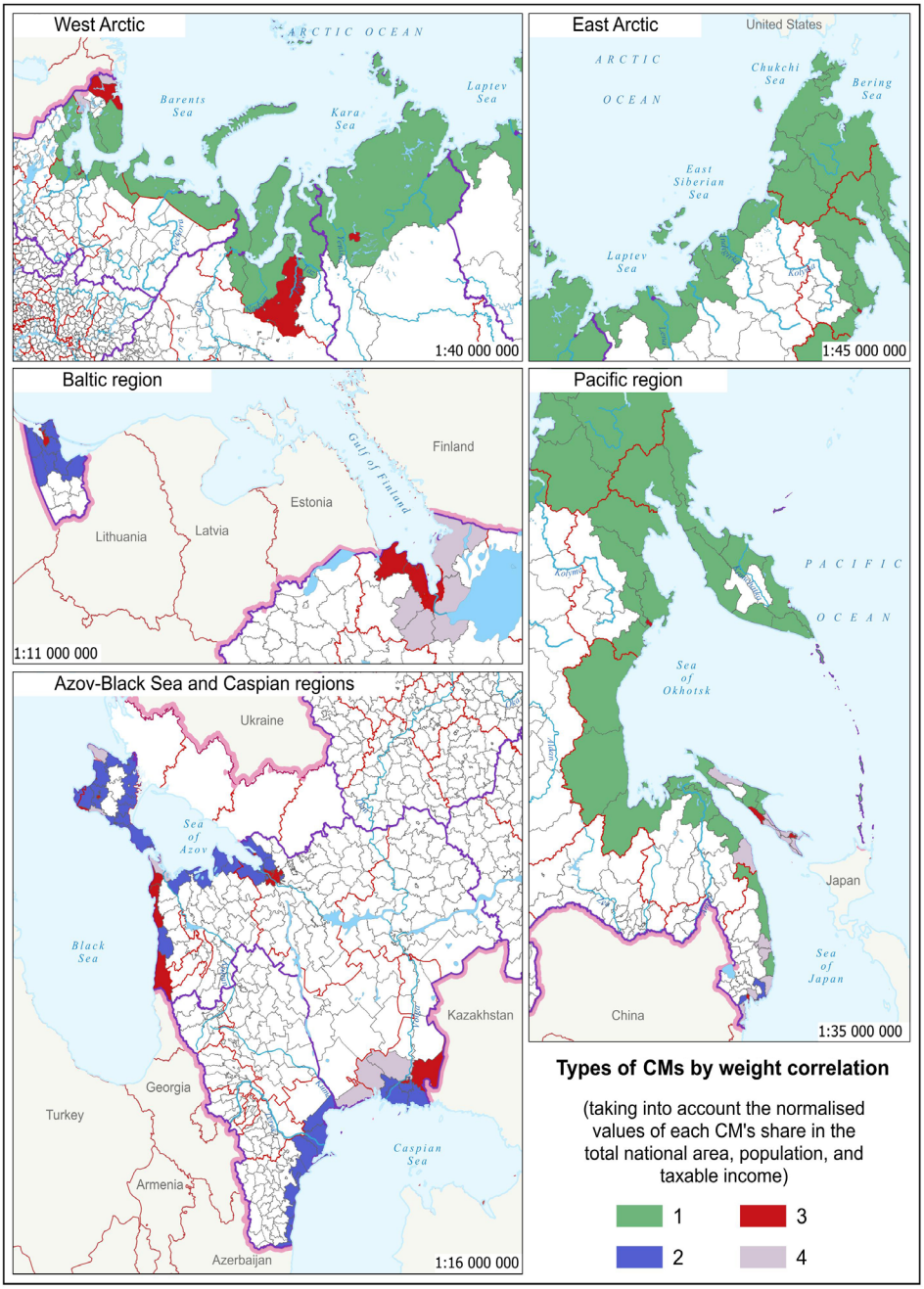

Fig. 1. A typological grouping of CMs according to the correlation of their territorial, demographic and economic weights:
1 — high territorial weight, medium/low demographic and economic weight;
2 — high demographic weight, medium/low territorial and economic weight;
3 — high economic weight, medium/low territorial and demographic weight;
4 — no pronounced predominance of any measure

Compiled from Rosstat data.

Table 1

Grouping of Russia's CMs by coastal regions (drainage basins) and their weight in key indicators

Coastal subregion (drainage basin)	Number of CMs	Population, 1,000 persons		Share in population, % (2024)		Share in territory, %		Economic weight*			
								billion roubles		% (2021)	
		2016	2024	Russia's CMs	Russia	Russia's CMs	Russia	2016	2021	Russia's CMs	Russia
West Arctic	32	1749	1543	7.6	1.1	41.4	11.4	706.8	1184.8	22.7	3.2
East Arctic	12	75	73	0.4	0.05	27.7	7.6	44.5	70.7	1.4	0.2
Pacific	54	2203	2070	10.2	1.4	28.0	7.7	725.6	1092.4	20.9	3.0
Baltic	24	7223	7964	39.2	5.4	0.9	0.2	383.1	740.8	14.2	2.0
Azov—Black Sea	41	5966	6210	30.5	4.2	1.1	0.3	935.5	1737.7	33.3	4.7
Caspian	23	2423	2480	12.2	1.7	1.0	0.3	376.2	393.6	7.7	1.1
Total	186	19639	20339	100	13.9	100	27.6	3171.7	5557.3	100	14.2

* Taxable income of individuals and sole proprietors (here and below excluding St. Petersburg, Sevastopol and closed cities).

Compiled from Rosstat data.

The south-west macrotype comprises the main coastal areas of intense economic activity the Saint Petersburg (the CMs of the Leningrad region) and Kaliningrad agglomerations in the Baltic drainage basin, Kuban CMs in the Black Sea area, CMs of the Rostov agglomeration, as well as the densely populated areas including CMs of Crimea, the Azov coast of Krasnodar Krai and Dagestan and the Astrakhan region in the Caspian drainage basin, which partially overlap with the coastal economic centres.

The north-east macrotype, by contrast, is characterised by pronounced peripherality and, even more strongly, by its northern character. Transitional features atypical for their macrotype are exhibited by the CMs of southern Primorsky Krai and the Sakhalin region, as well as by the Murmansk urban agglomeration (showing 'south' and 'west' characteristics within the geographical 'north' and 'east').

At the intra-regional, or drainage-basin, level, the positional and settlement features of CMs allow the identification of the following specific typological subgroups within the two macrotypes described above: 1) CMs belonging to the cores of 14 nationally significant maritime anchor centres (previously identified in [26]); 2) CMs constituting their peripheral components; 3) CMs outside the anchor centres (Fig. 2).

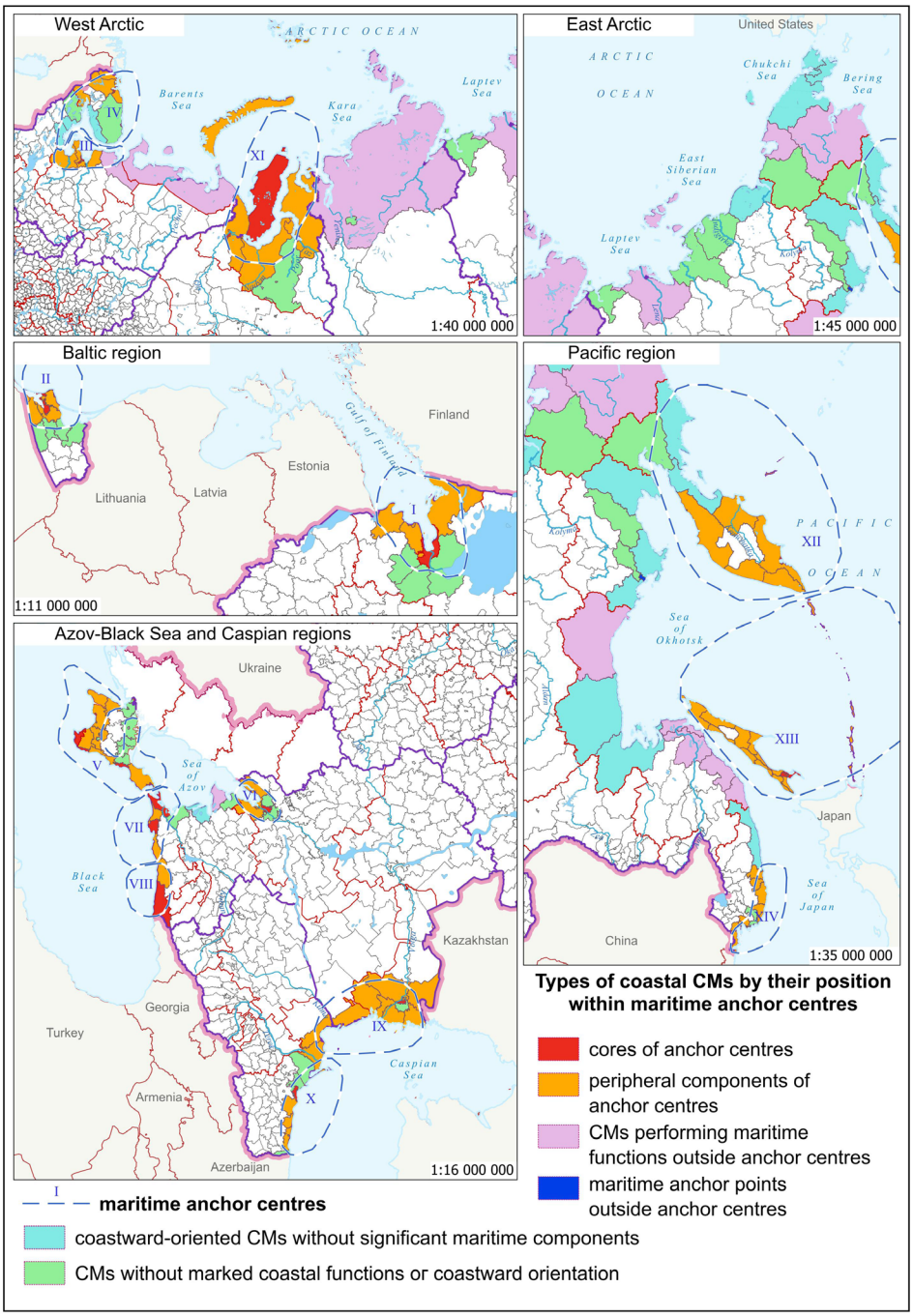

Fig. 2. Types of Russian coastal municipalities according to position within the structure of maritime anchor centres:
I — Saint Petersburg; *II* — Kaliningrad; *III* — Arkhangelsk; *IV* — Murmansk; *V* — Sevastopol—Crimea; *VI* — Rostov; *VII* — Novorossiysk; *VIII* — Sochi-Tuapse; *IX* — Astrakhan; *X* — Makhachkala—Caspian (emerging); *XI* — Yamal (emerging); *XII* — Kamchatka; *XIII* — Sakhalin; *XIV* — Vladivostok

Accounting for the phenomenon of anchor centres requires the typology to simultaneously focus as its second main component on the structural features of CMs, the most significant of which are maritime functionality and coastward orientation. In Russia's coastal zone, municipalities whose administrative centres are oriented towards the seas and oceans, i. e., exhibiting pronounced coastward orientation, predominate numerically. They total 116 territorial units, while the centres of the remaining 70 CMs are located inland. The north-east macrotype is characterised by a particularly strong expression of coastward orientation. Coastward-oriented CMs collectively account for 73 % of all coastal municipalities, around 75 % of their population and territory, and more than 65 % of the taxable income of individuals and private entrepreneurs.

The assessment of the interrelation between coastward orientation and maritime economic functions demonstrates the pronounced socio-economic effect of their confluence in specific CMs (Table 2). Overall, for Russia, the predominant subtype is coastward-oriented CMs with a multifunctional maritime economy (58 municipalities), accounting for a substantial share of demographic and economic weight. In the structure of the south-west macrotype, coastward-oriented municipalities with a multifunctional maritime economy form the backbone of the maritime economy, while a parity between coastward-oriented CMs with mono- and multifunctional maritime economies is observed within the north-east macrotype.

Table 2

Interrelation between coastward orientation and maritime economic functions of Russia's CMs

CM subtype	CM macrotype	Number of CMs	CMs' contribution to the national total, %		
			Population, as of 2024	Area	Individual income, as of 2021
Coastward-oriented properties not detected					
No significant maritime functions detected	Northeast	9	2.1	7.4	6.9
	Southwest	22	9.9	0.9	8.6
	All CMs	31	12.1	8.2	15.5
A monfunctional maritime economy	Northeast	13	1.3	13.2	3.5
	Southwest	18	7.1	0.7	6.0
	All CMs	31	8.4	13.8	9.5
A multifunctional maritime economy	Northeast	4	1.1	3.6	4.7
	Southwest	4	1.4	0.3	1.5
	All CMs	8	2.6	3.8	6.3
Coastward-oriented					
No significant maritime functions detected	Northeast	6	0.6	3.3	1.6
	Southwest	2	0.5	0.0	0.7
	All CMs	8	1.1	3.3	2.3
A monfunctional maritime economy	Northeast	37	2.1	32.4	5.0
	Southwest	13	3.3	0.2	2.6
	All CMs	50	5.4	32.5	7.5

The end of Table 2

CM subtype	CM macrotype	Number of CMs	CMs' contribution to the national total, %		
			Population, as of 2024	Area	Individual income, as of 2021
A multifunctional maritime economy	Northeast	28	10.7	37.4	22.9
	Southwest	30	59.8	0.9	36.0
	All CMs	58	70.5	38.3	58.9

Compiled from Rosstat data.

Mutual dependence is also evident in the dichotomy of typological properties 'part of an anchor centre — fulfilment of maritime functions'. CMs identified as 'cores of maritime anchor centres' are characterised by high demographic and economic weight and density, hosting large urban agglomerations with a multifunctional maritime economy supported by developed port infrastructure (Fig. 3). CMs with substantial territorial weight but low levels of settlement and economic development occupy peripheral positions within the anchor centres or lie outside them. The backbone of the maritime economy in such taxa is formed by dispersed monofunctional points lacking port infrastructure components.

As the analysis shows, coastward-oriented CMs with various structural characteristics predominate numerically within the north-east macrotype, the most significant being the cores of maritime anchor centres with a multifunctional maritime economy, with nine CMs of this subtype accounting for over 40 % of the population and individual income.

The most numerous and significant types of CMs in the south-west macrotype comprise both coastward-oriented and non-coastward-oriented territorial units, with an asymmetric distribution across key indicators. The central role in spatial development belongs to coastward-oriented cores of anchor centres with a multifunctional maritime economy, complemented by peripheral elements. In this part of the country's coastal zone, the density of demographic and economic potential increases.

Significant differences between CMs — representing the third dimension of their typology — relate to their inherent level of challenges: environmental, socio-economic and geopolitical, alongside the measures, avenues and instruments of targeted state support, primarily at the federal level.

The study identified, in particular, more than 60 CMs where socio-economic development is hindered by transport and logistical isolation, defined as the absence of direct year-round land transport links with major economic centres outside the region. Most of these are located within the north-east macrotype (Table 3): in the Arctic (some CMs of Murmansk Oblast, and territories from Nenets Autonomous Okrug to Chukotka) and in Pacific Russia (Kamchatka, Sakhalin, Magadan Oblast, and part of Khabarovsk Krai) [28]. Within the south-west macrotype, this issue affects the coastal municipalities of the Kaliningrad

region, whose isolation has increased in recent years due to the barrier effect of the Russian—Lithuanian border [31]. Overall, CMs of this type cover extensive areas exceeding 4.6 million km², or 79 % of the total territory of Russia's CMs, being home to 1.9 million people.

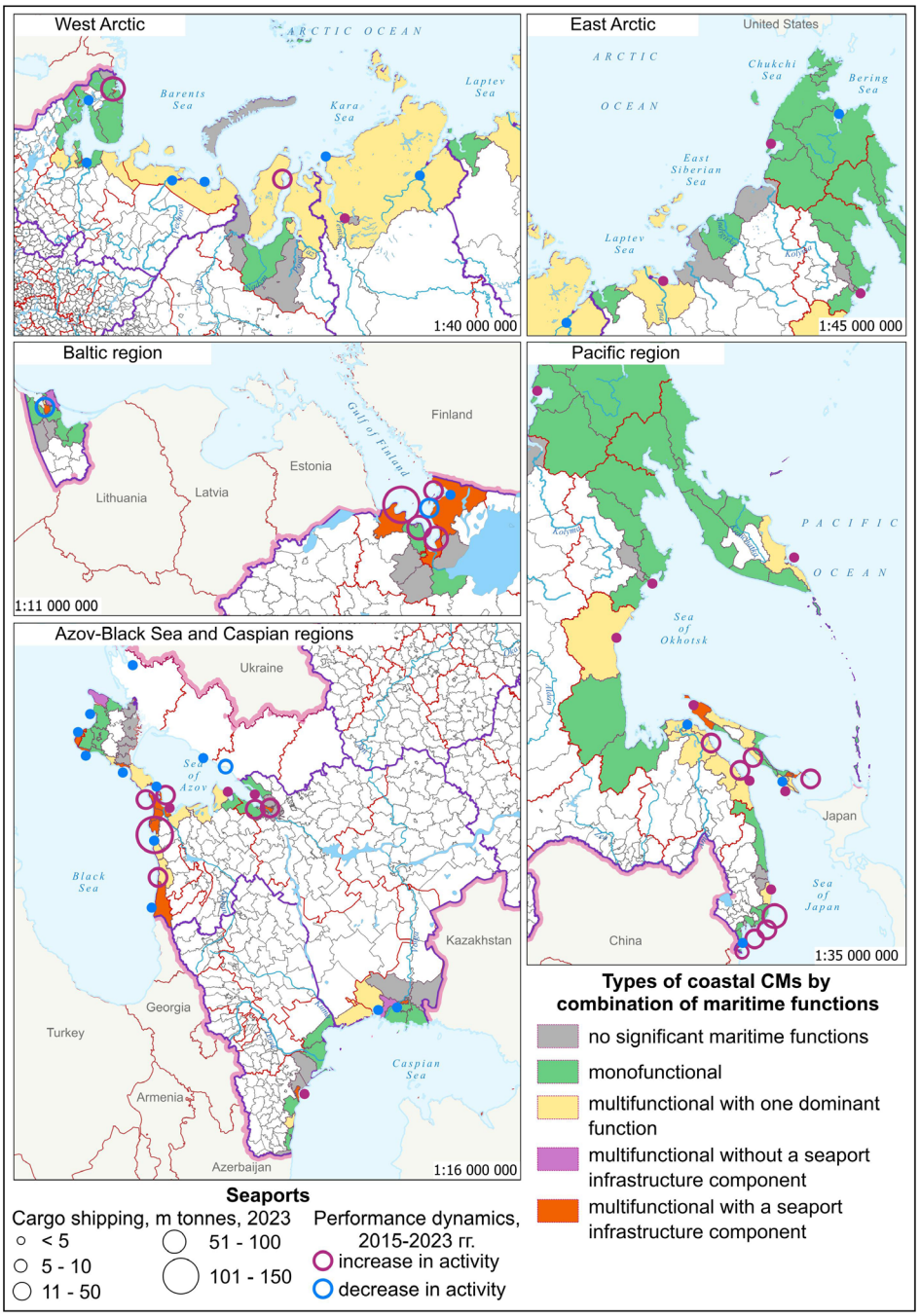

Fig. 3. Types of Russia's coastal municipalities by combination of maritime functions

Table 3

Interrelation between the most significant types of CMs and spatial development challenges

Subtype			Number of CMs	Weight of CM type, %			Problem field of spatial development						
Coastward orientation	Part of a maritime anchor centre	Maritime function		Population	Area	Income	Lag in socio-economic development	Unfavourable strategic military position	Economic difficulties arising from geopolitical circumstances	Increased vulnerability of natural systems	Isolation	Depopulation	Harsh natural and climatic conditions
Southwestern macrotype													
No	No	No	20	11.6	21.0	14.5	Yes	Yes	Yes	—	—	—	—
No	Periphery	Mono	12	5.1	17.5	3.5							
Yes	Periphery	Mono	11	3.7	6.3	3.8	—	Yes		Yes	Yes	—	—
Yes	Periphery	Multi	12	7.2	19.7	10.6	—	Yes	Yes	Yes	—	—	—
Yes	Core	Multi	15	64.3	7.7	53.2							
		Total	70	91.8	72.2	85.7	—						
Northeast macrotype													
Yes	No	Mono	12	1.9	17.3	1.6	Yes	—	—	—	Yes	Yes	Yes
Yes	Periphery	Mono	17	4.2	4.8	2.9							
Yes	No	Multi	6	3.7	28.6	3.3	—	—	—	—	Yes	Yes	Yes
Yes	Periphery	Multi	13	7.6	9.8	7.9	—	—	—	Yes	Yes	—	Yes
Yes	Core	Multi	9	47.9	0.1	40.1	—	—	—	Yes	—	—	Yes
		Total	57	65.3	60.6	55.8	—						

Compiled from Rosstat data.

Harsh natural and climatic conditions are more characteristic of CMs in the north-east macrotype. Eighty-eight CMs are located within the boundaries of Arctic regions, mountainous areas and zones with intense and hazardous seismic and volcanic activity. They occupy 97 % of the total area of the country's coastal municipalities, concentrating around 2.6 million people. Environmental problems in CMs of the north-east macrotype, mainly outside the cores of maritime anchor centres, are associated with global climate change, whereas the spatial development of most south-west macrotype CMs is linked to local externalities of settlement and economic dynamics generated by the densely populated cores of maritime anchor centres.

The development of CMs is deeply interwoven with socio-economic and geopolitical challenges. In the CMs of the north-east macrotype, depopulation and the marked lag of peripheral areas in socio-economic development are more pronounced. Over the past decade, several CMs of the south-west macrotype have faced economic difficulties stemming from geopolitical factors and shifts in the strategic military situation.

Within Russia's coastal zone, several problematic clusters can be identified (Fig. 4):

1) CMs of the Murmansk region in the northern part of the Kola Peninsula, excluding Murmansk and Severomorsk;

2) all coastal municipalities of Yakutia;

3) CMs of the northern part of Pacific Russia, extending from the Chukotka District of Chukotka Autonomous Okrug to the CMs of Magadan Region and Kamchatka, facing the Shelikhov Gulf in the Sea of Okhotsk;

4) CMs of the central part of Pacific Russia, extending from the Ola urban district of the Magadan region in the north to Tugur-Chumikan district of Khabarovsk Krai in the south;

5) CMs of the northern part of the Sakhalin region.

Federal spatial policy reflects the strategic importance of CMs for the country, its geopolitics and economy, alongside the socio-economic challenges faced by a significant number of CMs. All CMs of the north-east macrotype, as well as those located in the Kaliningrad region, Crimea and Dagestan, are identified as Russia's geostrategic territories: north-east macrotype CMs are included in this group as part of the Russian Arctic Zone and/or the Far Eastern Federal District, while Dagestan belongs to the North Caucasian Federal District. State programmes have been adopted for the socio-economic development of these geostrategic territories, enabling them to receive substantial federal investment. Moreover, these territories are largely covered by preferential economic regimes. For example, all Arctic CMs operate under the preferential regime of the Russian Arctic Zone, the Kaliningrad region is designated as a special economic zone and Crimea (Republic of Crimea and Sevastopol) as a free economic zone. In the north-east macro-region, a special economic zone has been established in the Magadan region and on the Kurile Islands of the Sakhalin region. Advanced development territories function in 37 Far Eastern and Arctic CMs, while the Free Port of Vladivostok regime covers 16 CMs across five Far Eastern regions. In the south-west macrotype, nine special economic zones of all types have been established in accordance with the federal law On Special Economic Zones in the Russian Federation. Overall, preferential regimes for economic activity apply to more than two-thirds of the 125 CMs, as well as Saint Petersburg and Sevastopol (Fig. 4).

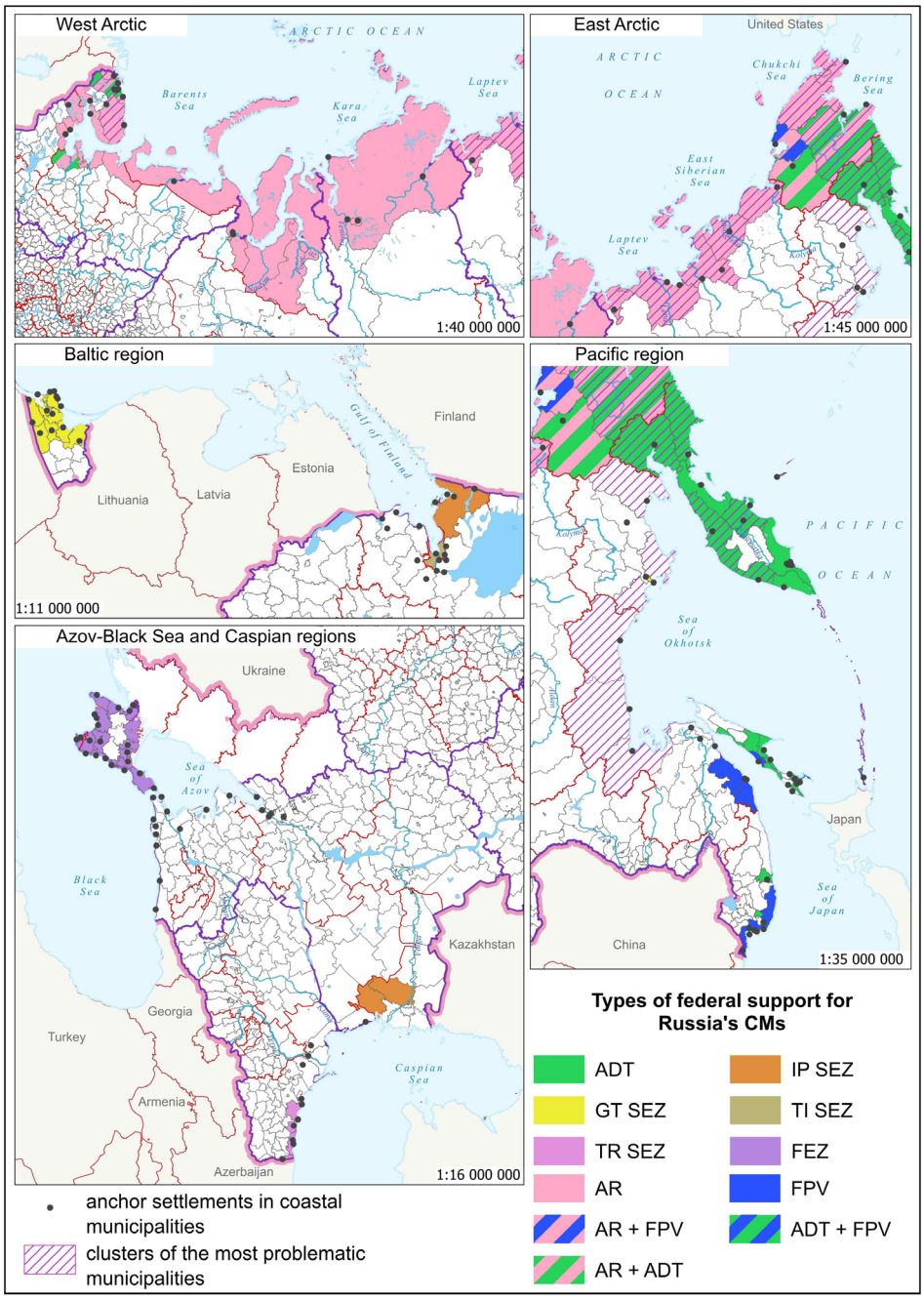

Fig. 4. Correlation between problematic clusters and types of federal support for Russia's CMs

Comment: ADT stands for Advanced Development Territory; SEZ for Special Economic Zones, including GT (General Type), IP (Industrial Production Type), TI (Technological Innovation Type), TR (Tourism and Recreation Type); FEZ for Free Economic Zone; FPV for Free Port of Vladivostok; AR for Russia's Arctic Zone.

Federal policy concerning CMs still encounters numerous challenges and bottlenecks. Preferential regimes for economic activity do not cover all problematic CMs, particularly those in the north-east macro-region outside the Russian Arctic Zone (Fig. 4). Predominantly single-industry CMs, coastal territories of advanced development specialise in fishery, the port sector or resource extraction, and confront a complex set of socio-economic challenges.

As shown in an earlier study [32], extending the preferential regime of the Russian Arctic Zone to all municipalities within it does not necessarily foster accelerated economic growth in the most problem-ridden territories. Despite these measures, most investors prefer to pursue projects under relatively favourable conditions, clustering in the Arkhangelsk and Murmansk agglomerations and leaving the CMs of Yakutia largely neglected. In other words, the prospects for socio-economic development of the most problematic, peripheral territories require further serious consideration.

The same applies to Dagestan: unlike all other geostrategic territories of Russia, the North Caucasus has not been assigned a special preferential regime, and support for Dagestan's CMs has been limited to the creation of tourism-and-recreation special economic zones. This circumstance is essential as investors enjoy greater preferences in the special economic zones of the Kaliningrad and Magadan regions, the free economic zone of Crimea, Russia's Arctic zone, advanced development territories, and the Free Port of Vladivostok.

Another issue is that preferential regimes fail to sufficiently leverage the advantages of municipalities' coastal locations. Within the north-east macrotype, a notable exception is the Free Port of Vladivostok regime, which is confined to the Far East and does not, for instance, cover Arctic ports. In the south-west, such exceptions include the Caspian cluster in the Astrakhan region, which unites a port-centred special economic zone in the Liman district and an industrial production special economic zone in the Narimanov district. Another example is the Ust-Luga industrial production zone in the Leningrad region's Kingisepp district.

The attempt to establish tourism-and-recreation special economic zones in the CMs of Krasnodar Krai proved highly unsuccessful, and it is currently the only coastal region of Russia without any preferential economic regimes [33]. The decision to create an industrial-production special economic zone in the Rostov region was made only in March 2024, with Novocherkassk chosen as its location — a municipality that is not coastal itself but is part of the Rostov-on-Don agglomeration.

A similar lack of clear positioning of CMs among other types of municipalities is evident from the Unified List of Anchor Settlements, which is cited in the recently enacted 2030 Spatial Development Strategy of Russia with Outlook to 2036 as one of the main mechanisms for implementing the

document.[1] Of Russia's 2,160 anchor settlements, 158 are located within coastal municipalities (Fig. 4). Among these, several of the most widely represented types can be identified. Over a third (59) serve as main centres providing social services to one or several municipalities; 20 settlements are sites of new investment projects significantly impacting the local economy; another 20 are anchor settlements whose primary function is servicing critical infrastructure, with most influencing spatial development predominantly at the local or municipal level. Within Russia's coastal zone, 10 anchor settlements constitute the core of urban agglomerations (cities with populations exceeding 250,000). The densest network of anchor settlements is located in the CMs of the south-west macrotype, reflecting the national geographical settlement patterns.

It seems that the Unified List of Anchor Settlements should reflect the multiplicity of settlements' functions, paying particular attention to centres of maritime economic activity. The Strategy itself sets the goal of ensuring the effective use of maritime zones in conjunction with the development of coastal territories, but concrete measures to achieve this goal have yet to be formulated.

Conclusion

1. The strategic understanding of 'development of maritime activity and maritime potential'[2] highlighted in Russia's Maritime Doctrine as one of the decisive conditions for the country's sustainable socio-economic development requires not only prioritised attention to the nation's coastal territories and their settlement and economic specificities, but also the adoption of a multi-scalar and detailed approach to their analysis. This, in turn, implies identifying municipal-level territorial units as the key entities exhibiting coastality.

2. The significant number of Russia's CMs — 186 — and their pronounced heterogeneity in terms of basic conditions and key socio-economic development parameters necessitate the use of a multidimensional typology framework. Its foundation — the identification of specific CM types and their aggregated macrotypes — should be based on the consideration of zonal and azonal

[1] 2030 Spatial Development Strategy of Russia with Outlook to 2036, 2025, *Ministry of Economic Development of the Russian Federation*, URL: https://www.economy.gov.ru/material/directions/regionalnoe_razvitie/strategicheskoe_planirovanie_prostranstvennogo_razvitiya/strategiya_prostranstvennogo_razvitiya_rossii_do_2030_goda_c_prognozom_do_2036_goda/ (accessed 05.02.2025). According to the text of the Strategy, an 'anchor settlement' is a settlement whose priority development contributes to achieving national goals and ensuring national security, including by providing access to education, healthcare, cultural services and the fulfilment of other needs for residents of the surrounding area.

[2] On the approval of the Maritime Doctrine of the Russian Federation (amended and supplemented), Decree of President of the Russian Federation, 31 July 2022, № 512, *Garant legal reference system*, URL: https://base.garant.ru/405077499/#block_1000 (accessed 27.04.2025).

characteristics, the former comprising natural and economic factors and settlement patterns, and the latter core—periphery urban-type structures. These characteristics should be correlated with maritime functionality and position, reflecting the effect of coastward orientation. The framework should also take into account a range of critical local socio-economic and environmental problems, together with targeted, territorially adapted measures of federal spatial development regulation.

3. Accounting for the characteristics of coastal territories makes it possible to distinguish atypical CMs, such as the Murmansk and Vladivostok agglomerations and southern Sakhalin, alongside the two clearly identifiable macrotypes of north-east' and 'south-west'. It also allows the identification of several of the most widely represented integrated types. The predominant CMs, in terms of number, demographic and economic potential, combine coastward orientation with maritime economic functionality, alongside diversified maritime functions linked to maritime anchor centres.

4. In the spatial development of north-east macrotype CMs, the attraction of administrative centres to the sea and the development of maritime economic functions are more significant than in south-west CMs, where natural and climatic conditions have produced a more complex territorial and sectoral economic structure. For several coastal municipalities in the Arctic and Pacific regions of Russia, their coastal location poses a challenge rather than providing a geographical advantage, given the current level of coastal development.

5. The main trajectory of spatial development of Russia's CMs involves diversifying their maritime economic functions, improving transport connectivity with inland regions and extending maritime activities further inland and into adjacent waters, following the principles and approaches of integrated water—land planning.

6. Fulfilling the task of developing marine spatial planning, set out in Russia's 2030 Spatial Development Strategy with Outlook to 2036, requires coordinated development of maritime zones and coastal territories. This necessitates accounting for the full diversity of CMs presented in this article, particularly regarding coastward orientation and the economic specialisation of coastal territories. Consequently, federal spatial policy should focus on creating conditions for the economic development of coastal municipalities that currently face significant socio-economic challenges, peripherality and limited engagement in maritime activities.

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